



Study to Access the Nutritional Status of Children of age under five in Bikaner, Rajasthan – India

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Introduction

The World Health Organization estimates that by the year 2015, the prevalence of malnutrition will be 17.6% globally, with 113.4 million children younger than 5 years affected as measured by low weight for age. The overwhelming majority of these children, 112.8 million, will live in developing countries with 70% of these children in Asia, particularly the south-central region, and 26% in Africa ^[1]. An additional 165 million (29.0%) children will have stunted length/height secondary to poor nutrition. Currently, more than half of young children in South Asia have PEM, which is 6.5 times the prevalence in the western hemisphere ^[2]. India, Bangladesh and Pakistan alone account for half the world's total underweight children. These three countries are home to just 29% of the developing world's under-five population ^[3]. In India the percentage of children affected with malnutrition in various states were Madhya Pradesh (55%), Orissa (54%), Utter Pradesh (52%) and Rajasthan (51%) ^[4].

Malnutrition may lead to delays in starting school. Such a delay will lead to a loss in lifetime earnings ^[5]. Malnourished children enter school later and perform relatively poorly on tests of cognitive achievement ^[6]. It reduces the resistance of an individual to diseases and infections, which in turn further drains the system of the nutrients that are present in the body. In cases of extreme poverty and malnutrition, the onset of infection and disease results in high rates of mortality ^[7].

Key words

Malnutrition, IAP, WHO, ICMR.

Abbreviations

- WHO- World Health Organization
- IAP- Indian Association of Pediatrics
- ICMR- Indian Council of Medical Research

Statement of problem:

A study to assess nutritional status of children of age under five in a selected sub center of Bikaner, Rajasthan - India

Objectives

The objective of the research is to:

- assess the nutritional status of under five children in terms of height and weight
- compare the nutritional status of under five children with various standards
- compare the nutritional status of under five children with their demographic variables

Limitations

- Study was limited to children who were
- willing to participate in the study
- available at the time of data collection
- between 3 month to 5 years of age
- not having any chronic illness, deformities or congenital problems

Methodology

To assess the nutritional status of under five children a descriptive study with cross sectional survey approach was used. The study was conducted at selected sub center of Bikaner, Rajasthan. The population under this study was under five children residing in selected sub center. Sample size included 386 under five children of selected sub center. Purposive sampling technique was used to select the samples. The tools used for data collection were

- Base line data sheet
- Salter weighing machine
- Height scale / Infantometer

A pilot study was conducted in Magundanchavadi, Salem. The purpose of the study was to find out feasibility of undertaking the study, validity and reliability of the tools and to decide on the plan of data analysis. A total of 30 under five children were included for pilot study. The investigator found that the study to be feasible. Data was collected from 10th Sep to 23rd Sep 2007. Data was collected from approximately 30-34 samples per day.

Analysis and Interpretation

The finding revealed that mean weight and height of the children increases with age. The mean weight and height when compared to IAP, WHO and ICMR standards showed poor nutritional status of under five children.

Majority of male under five children were normal according to IAP, WHO and ICMR standards (79%, 72.86% and 76.38% respectively) (Figure 1, Figure 2, and Figure 3). Majority of female under five children were normal according to IAP, WHO and ICMR standards (68.44%, 52.94% and 61.48% respectively) (Figure 1, Figure 2, and Figure 3). There was highly significant correlation between the weight and height with age. Upper range values were higher from mean weight for 43-48 months and 49-54 months and lower range value was higher for 37-42 months and 19-24 months (Figure 4). Upper range value shows that the lowest difference from mean height was at 37-42 months of age, whereas highest difference at 7-12 months (Figure 5). There was highly significant association between nutritional status and sex, birth order of children, socio economic status of the family and education of mothers and significant association was found between nutritional status and occupation of mother (Table-1). The association was not found between the nutritional status when compared with the age and religion of children.

SUMMARY

A descriptive cross sectional survey was conducted on 386 under five children of selected sub center of Bikaner, Rajasthan from 10-9-07 to 23-9-07 to assess their nutritional status. The collected data were analyzed by using descriptive and inferential statistics.

1. The findings are summarized as follows:
2. 51.55 % of children were male and 40% of them were of first birth order.
3. 73.5% of mothers of under five children had no formal education and only 5.5% had middle school and higher education.
4. 97% of the mothers of under five children were house wives.
5. 85.5% of children were from the family with above poverty line.
6. The mean weight and height of children increases with increase in age.
7. Upper range values were higher from mean weight for 43-48 months & 49-54 months and lower range value was higher for 37-42 months and 19-24 months, revealing scattered values for these age groups.
8. Female children had lower mean weight & height for age when compared to male children.
9. Children of first birth order, belonging to Hindu religion, of working mothers, of mothers with middle school & higher education and those from higher socio economic status family had highest mean weight and height.

10. Mean weight & height for age of both the male and female children were lower, when compared to IAP, WHO and ICMR standards.
11. Majority of male under five children were normal according to IAP, WHO and ICMR standards (79%, 72.86% and 76.38% respectively).
12. Majority of female under five children were normal according to IAP, WHO and ICMR standards (68.44%, 52.94% and 61.48% respectively).
13. There was highly significant association between nutritional status and sex, birth order, poverty line and education of mothers and significant association was found between nutritional status and occupation of mother.
14. There was no association between the nutritional status when compared with the age and religion of children.

LIMITATION

It was planned to include the children from age of 1 month to 5 years. However no consent was given by mothers of 1-2 months of age children. Hence they were excluded.

IMPLICATION

a) a) Nursing service

- Camps should be conducted to identify high risk malnourished children.
- Public health nurse should visit the families and educate mothers on child nutrition.
- Parents should be educated about the importance of growth monitoring by using growth chart.

b) b) Nursing education

- In service training programmes for health workers for early detection and management of malnutrition.
- Workshops, seminars should be conducted at national, state and district level for health personnel regarding child nutrition.

c) c) Nursing research

- Experimental studies can be conducted on malnourished children based on planned teaching programme on nutritional diet and test for its effectiveness.
- Research can be done on nutrition modules of IAP, WHO and ICMR to improve nutritional status of under five children.

RECOMMENDATIONS

- Educational programmes need to be designed to create awareness among parents.
- Comparative study need to be conduct to identify nutritional status of under five of urban and rural area.

Figures and Tables

Table 1: Association between nutritional status and demographic variables of under five children according to IAP classification

Parameter	c2 values	P value	Level of Significance
Age	1.03	0.05	Not Significant
Sex	16.45	0.01	Highly Significant
Religion	3.31	0.05	Not Significant
Birth Order	86.41	0.01	Highly Significant
Poverty Line	13.81	0.01	Highly Significant
Occupation of Mother	4.79	0.05	Significant
Education of Mother	17.59	0.01	Highly Significant
df=1, Table Value=3.84			

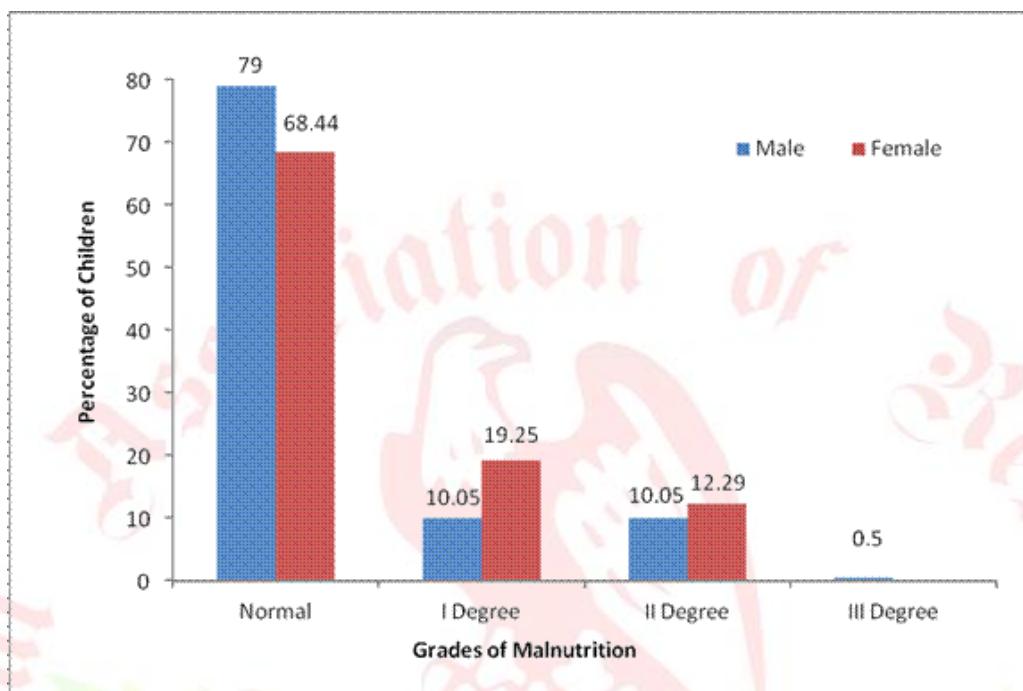


Figure 1: Sex wise comparison of Nutritional status of children of age under 05 according to IAP standard

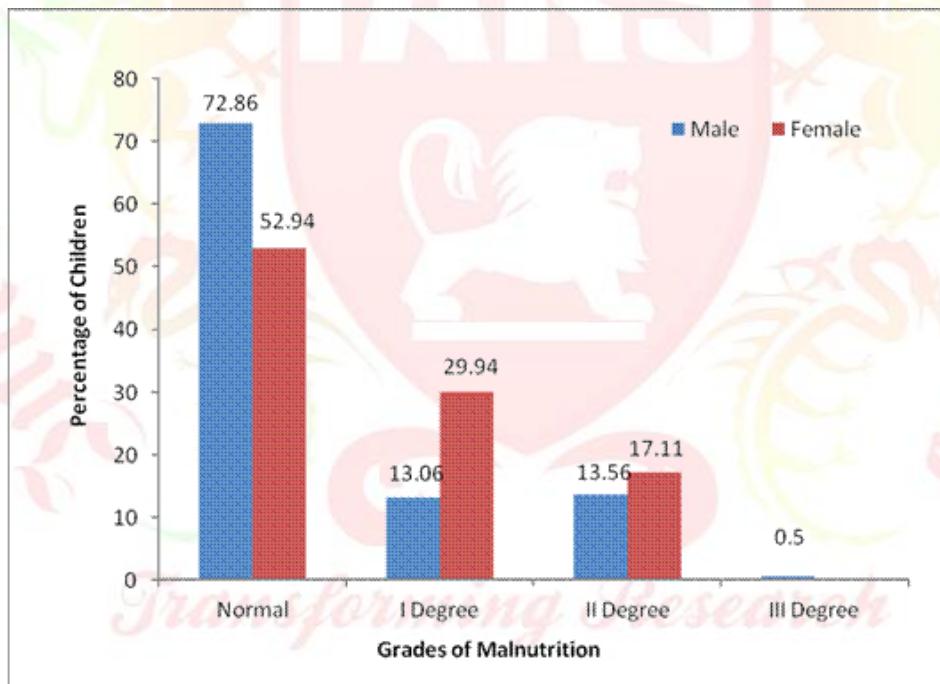


Figure 2: Sex wise comparison of Nutritional status of children of age under 05 according to WHO standard

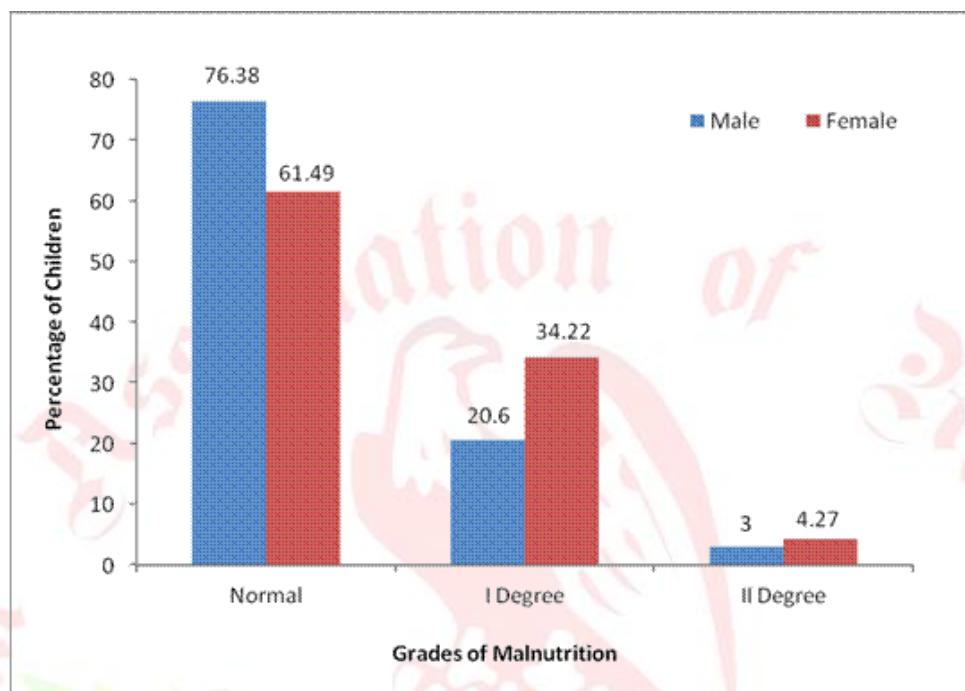


Figure 3: Sex wise comparison of Nutritional status of children of age under 05 according to ICMR standard

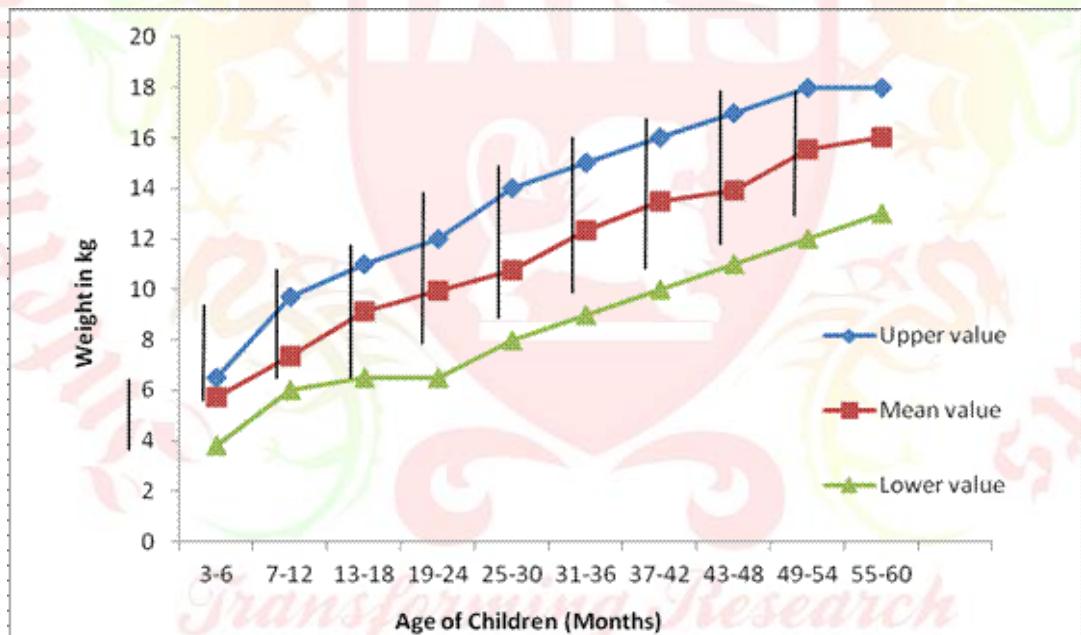


Figure 4: Age wise distribution of range from mean weight for age of children of age under 05

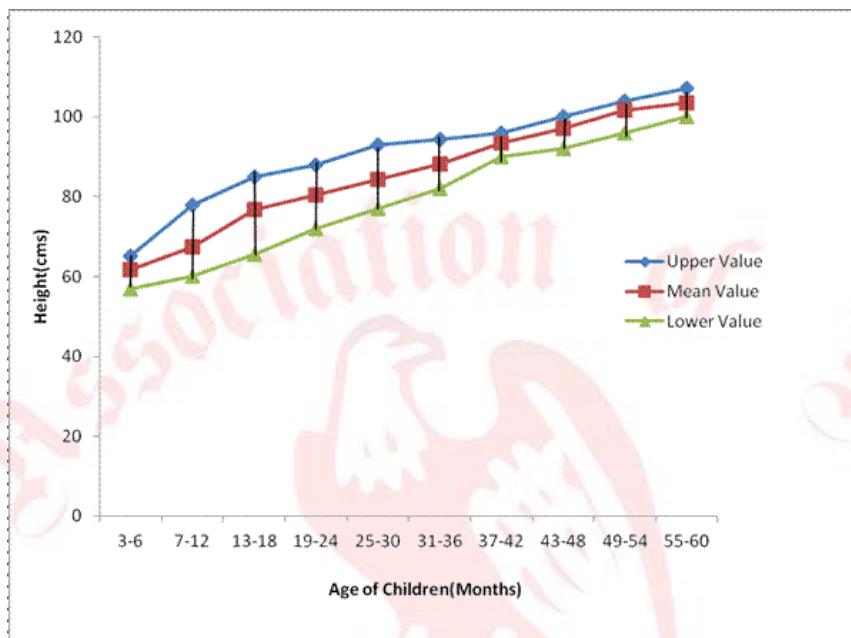


Figure 5: Age wise distribution of range from mean Height for age of children of age under 05

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Certificate of Recognition

This certificate is awarded to

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